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REMARKS

In response to the Office Action mailed July 15, 2003, the Applicant respectfully requests reconsideration.

Claims 1-28 have been examined. By this amendment, Applicant amends claim 1 as shown above under the heading *Listing of the Claims*. Thus, claims 1-28 currently are pending for examination, of which claims 1, 10, 19 and 20 are independent.

1. Summary of Telephone Interview

Applicant and Applicant's representatives appreciate the courtesy of Examiner Stimpak in granting and conducting a telephone interview on December 15, 2003 between Examiner Stimpak, her supervisor, Tariq Hafiz, and Applicant's representative, Daniel P. McLoughlin. The substance of the telephone interview are fully summarized herein.

During the telephone interview, the teachings of "Collaborative Reputation Mechanisms in Electronic Marketplaces" by Giorgos C. Zacharia ("Zacharia"), in particular, the meanings of the terms "θ", "θ'" and "m", were discussed. No agreement was reached as to the meaning of these terms, as both parties agreed that the complexity of the subject matter made it difficult to discuss over the telephone. Accordingly, Mr. Hafiz suggested that Applicant submit a written response to the Office Action, explaining Applicant's understanding of the teachings of Zacharia, including the meanings of the above terms.

The rejection of claims 1-9 under 35 U.S.C. §101 also was discussed, albeit briefly, during the telephone interview. Applicant proposed overcoming the §101 rejection by amending claim 1 per Applicant's previous agreement with Examiner Stimpak with respect to this application and related applications (see Section 2 below). Mr. Hafiz suggested that such amendment may not be sufficient to overcome the §101 rejection, but decided to reserve judgment until reading Applicant's written response.

Accordingly, Applicant hereby submits this response. Both parties agreed that, after Examiner Stimpak has reviewed this response, she will contact Applicant's representative by telephone if any issues relating to patentability still remain.

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2. Claims 1-9 As Amended Recite Statutory Subject Matter Under 35 U.S.C. §101

Claims 1-9 stand rejected (Office Action, ¶6) under 35 U.S.C. §101 as purportedly claiming inventions directed to non-statutory subject matter. Applicant respectfully disagrees.

The Office Action states (Section 9, pages 9-10) that the two-prong test for determining whether the claimed invention is directed to statutory subject matter under §101 includes determining: "(1) whether the invention is within the technological arts; and (2) whether the invention produces a useful, concrete, and tangible result." This two prong test is not the correct legal standard under controlling case law for determining statutory subject matter under §101, and the Office Action cites no authority for the proposed text.

The correct legal standard for determining whether the invention is statutory subject matter only includes the second prong, i.e., determining whether the invention produces a useful, concrete and tangible result. See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373, Fed. Cir. (1998), *cert. denied*, 119 S. Ct. 851 (1999). The first prong set forth in the Office Action, i.e., whether the invention is within the technological arts, is not part of the legal standard for determining statutory subject matter under §101. The U.S. Constitution refers to the "useful arts," but a rejection based on the absence of a "technological" art is not founded in the Constitution or any statute, and is an <u>ultra vires</u> exercise of administrative authority inconsistent with the Administration Procedures Act. Although the Office Action purports to provide a rationale for this first prong (Page 4, first full paragraph), the Office Action cites no statute, case law or other authority to support the assertion of this first prong as part of the test for determining statutory subject matter. Moreover, amici as well as *State Street Bank* had made the "technological arts" argument to the Court of Appeals for the Federal Circuit and that court clearly declined to follow the suggestion that there is such a requirement.

Further, the Office Action concedes that claims 1-9 satisfy the correct legal standard (i.e., the second prong above) for determining statutory subject matter under §101. (Page 5, third and fourth paragraphs). Accordingly, claims 1-9 satisfy the requirements of 35 U.S.C. §101 and the rejection should be withdrawn.

Although claim 1, as filed, recites statutory subject matter, Applicant nonetheless has amended claim 1, as shown above, in an effort to further the prosecution of this application and avoid the delay and expense of an appeal.

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Examiner Stimpak also serves as the Examiner for a related patent application serial no. 09/710,011. On April 3, 2003, Examiner Stimpak, Examiner Diaz, and Applicant's Representatives, Steven J. Henry and Daniel P. McLoughlin conducted a telephone interview for that application. During this interview, it was noted that similar §101 rejections had been made to other related applications and the 09/710,011 application. During subsequent telephone interviews between Examiner Stimpak and Daniel P. McLoughlin, it was agreed that these §101 rejections could be overcome by making the amendment presented in this response. Accordingly, as agreed during the April 3rd telephone interview, Applicant has amended claim 1 to include the term "computer-implemented" before the term "acts" to make clear that every act recited in claim 1 is implemented by a computer.

Unarguably, claim 1 as amended recites statutory subject matter under 35 U.S.C. §101. Accordingly, Applicant respectfully requests that the rejection of claims 1-9 under §101 be withdrawn.

3. Claims 1-10 Patentably Distinguish Over Zacharia

Claims 1-10 stand rejected (Office Action, ¶5) under 35 U.S.C. §102(a) as purportedly being anticipated by Zacharia. Applicant respectfully traverses this rejection.

3.1 Discussion of Zacharia

The discussion of Zacharia set forth in Applicant's previous response dated April 11, 2003, is hereby incorporated by reference into this response to avoid unnecessary repetitiveness.

The July 15th Office Action states, "In equation 3 of Zacharia, it is specifically shown that θ' is the minimum of the connected paths between the rater and the ratee, thereby determining the reputation according to the shortest connected path between rater and ratee." (Page 2, Section 6). The Office Action further states that "the reputation calculation involves combining the first (t) ratings and weighting the ratings by the **length, θ or m.**" (emphasis added) Applicant respectfully disagrees, as neither θ nor m represents a length of a rating path between two users. In contrast, both θ and m represent a **number** of rating paths. Consequently, θ' represents a **number of rating paths, not** a shortest length of a path.

Applicant appreciates that the concepts disclosed in Zacharia, in particular, the mathematics of Equation 3, are complex and difficult to understand. This complexity is

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exacerbated by inconsistencies found in Zacharia. Accordingly, Applicant takes this opportunity to step through Equation 3, and to explain the meanings of the terms θ, m and θ' in turn.

As set forth in Equation 3, the reputation, R_{i+1}, determined in Zacharia, is weighted by $1/\theta'$, where $\theta' = min(\theta, m)$ and $m = deg(A_L)$. Thus, to understand the meaning of θ', one must first understand the meaning of $min(\theta, m)$. To understand the meaning of $min(\theta, m)$, one must first understand the meanings of θ and m.

3.1.1 The meaning of m

The meaning of m in unambiguous. Equation 3 states that $m = deg(A_L)$, where $deg(A_L)$ is the number of the connected paths between users A to A_L with a length less than or equal to a particular length, L. (Page 5, second column, penultimate paragraph). Thus, m does not represent a length of a path, but represents **the number** of the connected paths between users that have a length less than or equal to a particular length.

3.1.2 The meaning of θ

Admittedly, Zacharia uses this term inconsistently. Excluding Equations 2 and 3, Zacharia uses the term θ seven times in describing the Histos algorithm on page 5. In five of these seven cases, Zacharia refers to θ as a quantitative number. (Page 5, first column, last two paragraphs; second column, second paragraph, second line). In only two of these seven cases does Zacharia refer to θ as a length. (See second column, first paragraph--"a base case of length θ", and the second paragraph, first line). Even though it is not clear what "a base case of length θ" means, the Office Action interprets θ to mean a length of a rating path based solely on these two isolated uses of θ. Applicant respectfully disagrees, as this interpretation is not reasonable in the context of Zacharia. In addition to being contradicted by with the five references to θ as a number of rating paths, such interpretation does not make sense in the context of Equation 3. Equation 3 states that $\theta' = min(\theta, m)$. The generic function min() produces the minimum of the arguments that appear between the parentheses, (). Thus, $min(\theta, m)$ produces the minimum of θ and m. As set forth above, m unambiguously means a number of ratings paths. If the Office Action's interpretation of θ as a length of a path were adopted, then $min(\theta, m)$ would determine the minimum of: 1) a *length* of a path and 2) a *number* of paths. It is not clear to Applicant why it would be desirable to determine the minimum of two such incompatible arguments. In short, $min(\theta, m)$ would not make sense if θ represented a length of a path.

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Thus, with respect to Equation 3, identified by the Examiner, one skilled in the art will understand that θ represents the number of chronologically most recent paths used to determine the personalized reputation. (See Page 5, first column, penultimate paragraph, "[I]f we find more than θ connected paths taking us to A_L, we are interested only in the most recent θ paths."). In other words, if more than θ rating paths connect a user A to a user A_L, Equation 3 considers only the most recent θ paths. Thus, θ limits the number of paths that can be used to determine the reputation, R_{t+1}. Again, in Equation 3, m is the number of connected paths from A to A_L with a length less than or equal to a particular length. Thus, $min(\theta, m)$ is the minimum of: θ, the number of chronologically most recent paths used to determine the personalized reputation, and m, the number of connected paths from A to A_L with a length less than or equal to a particular length. In other words, $min(\theta, m)$ is equal to the number m of rating paths connecting a user A to a user A_L that are less than or equal to a particular length, <u>unless</u> this number m is greater than θ, in which case $min(\theta, m)$ is equal to θ.

For example, if $m = 7$ and $\theta = 8$, then there are 7 rating paths that have a length less than or equal to a particular length, and only the 8 most recent rating paths are to be used to determine the reputation. In such a case, all 7 rating paths will be used to determine the reputation. However, if $m = 7$ and $\theta = 5$, then only the 5 most recent rating paths of the 7 rating paths will be used to determine the reputation.

3.1.3 The meaning of θ'

For the reasons set forth in the preceding section, θ' is the number of paths to be considered in determining the reputation, R_{t+1}. Specifically, $\theta' = min(\theta, m) =$ the minimum of: m, the number of the connected paths from A to A_L with a length less than or equal to a particular length, L; and θ, the number of the chronologically most recent paths that are to be used to determine the reputation. Thus, θ' is not a shortest path length between A and A_L.

3.1.4 The meaning of N-1

During the telephone interview, Mr. Hafiz and Examiner Stimpak proposed alternative grounds by which Zacharia discloses determining a reputation according to the shortest connected path between users A and A_L. Specifically, Mr. Hafiz and Examiner Stimpak asserted that N-1 represents a shortest connected path. Applicant respectfully disagrees. As explained by Applicant during the telephone interview, N-1 is <u>not</u> a shortest length of any path between A and A_L, but, in contrast, is the *maximum* length for any path that will be considered in determining a

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personal reputation of A_L from the perspective of A. (See Page 5, column 1, last paragraph). For example, in accordance with the teachings of Zacharia, if N-1 = 9, then any path of length 9 or less will be used to determine the reputation, *regardless* of whether the path is a shortest path. Thus, if there are seven rating paths, ranging in length from 5-9, with two paths having a length of 5, all seven of these paths will be used to determine the reputation, not just the two paths having the shortest length of 5.

Therefore, none of θ, θ', m or N-1 represent a shortest length of a path between two users. Therefore, in contrast to the assertions of the Office Action, Zacharia does not disclose "determining the reputation according to the shortest connected path between rater and ratee."

3.1 Claim 1 Is Not Anticipated by Zacharia

Claim 1 is directed to a method, for a population of entities, of determining a personalized ratee reputation of a first entity from the perspective of a second entity associated with the first entity by one or more rating paths. A rating path comprises one or more rating links, each rating link defining a rating of a rated entity provided by a rating entity. Each rating path has a length defined as a number of rating links comprised in the path, and each entity comprised on one of the rating paths has a level defined as a number of rating links between the entity and the second entity. The method comprises an act (A) of performing a breadth-first search beginning at the second entity **to determine, from the one or more rating paths, one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity.** The method further comprises acts of:(B) for each determined first rating path, identifying a third entity on the first rating path that has a level equal to one less than the first length; and (C) for each identified third entity, determining a first rating of the first entity provided by the third entity; (D) combining the first ratings; and (E) producing the personalized ratee reputation **by weighting the combined first ratings by an amount according to the first length.**

Claim 1 is not anticipated by Zacharia because Zacharia fails to disclose a method of determining a personalized ratee reputation of a first entity from the perspective of a second entity associated with the first entity by one or more rating paths, the method comprising, *inter alia*, determining, from the one or more rating paths, one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity, and producing the personalized ratee reputation by weighting the combined first ratings by an

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amount according to the first length. In contrast, as set forth above, Zacharia discloses determining one or more rating paths having a length less than a particular length, not one or more paths having a *shortest* length. Further, Zacharia discloses weighting combined ratings based on a *number* of rating paths considered, not according to a *shortest length* of a rating path.

4. Claims 11-18 Patentably Distinguish over Zacharia

Claim 11 stands rejected under 35 U.S.C. 102(b) as purportedly being anticipated by Zacharia. Applicant respectfully traverses this rejection because Zacharia does not disclose a system for determining, in a population of entities, a personalized ratee reputation of a first entity from the perspective of a second entity associated with the first entity by one or more rating paths, wherein a rating path comprises one or more rating links, each rating link defining a rating of a rated entity provided by a rating entity, wherein each rating path has a length defined as a number of rating links comprised in the path, and each entity comprised on one of the rating paths has a level defined as a number of rating links between the entity and the second entity, the system comprising: a path-searching module to receive as input an indication of the first entity and an indication of the second entity, to perform a breadth-first search beginning at the second entity to determine, from the one or more rating paths, **one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity,** and to provide as output an indication of the one or more first rating paths; a first look-up module to receive as input the indication of the one or more first rating paths, to identify, for each determined first rating path, a third entity on the first rating path that has a level equal to one less than the first length, and to provide as output an indication of the one or more third entities; a second look-up module to receive as input the indication of the first entity and the indication of the one or more third entities, to determine, for each third entity, a first rating of the first entity provided by the third entity, and to provide as output the first ratings; and a ratings combining module, to receive as input the first ratings, to generate the personalized ratee reputation by combining the first ratings and **weighting the combined first ratings by an amount according to the first length,** and to provide as output the personalized ratee reputation, as recited in claim 11.

Therefore, for at least these reasons, claim 11 is not anticipated by Zacharia under §102(b). Accordingly, Applicant respectfully requests that the rejection of claim 11 under

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§102(b) as being anticipated by Zacharia be withdrawn. Claims 12-18, which each depend directly or indirectly from claim 11, patentably distinguish over the art of record for at least the same reasons as claim 11. Accordingly, Applicant respectfully requests that the rejections of these claims under §102(a) be withdrawn.

5. Claim 19 Patentably Distinguishes Over Zacharia

Claim 19 stands rejected under 35 U.S.C. 102(b) as purportedly being anticipated by Zacharia. Applicant respectfully traverses this rejection because Zacharia fails to disclose a system for determining, for a population of entities, a personalized ratee reputation of a first entity from the perspective of a second entity associated with the first entity by one or more rating paths, wherein a rating path comprises one or more rating links, each rating link defining a rating of a rated entity provided by a rating entity, wherein each rating path has a length defined as a number of rating links comprised in the path, and each entity comprised on one of the rating paths has a level defined as a number of rating links between the entity and the second entity, the system comprising: means for performing a breadth-first search beginning at the second entity to determine, from the one or more rating paths, one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity; means for identifying, for each determined first rating path, a third entity on the first rating path that has a level equal to one less than the first length; means for determining, for each identified third entity, a first rating of the first entity provided by the third entity; means for combining the first ratings; and means for producing the personalized ratee reputation by weighting the combined first ratings by an amount according to the first length, as recited in claim 19.

Therefore, for at least these reasons, claim 19 is not anticipated by Zacharia under §102(b). Accordingly, Applicant respectfully requests that the rejection of claim 19 under §102(b) as being anticipated by Zacharia be withdrawn.

6. Claims 20-28 Patentably Distinguish Over Zacharia

Claim 20 stands rejected under 35 U.S.C. 102(b) as purportedly being anticipated by Zacharia. Applicant respectfully traverses this rejection because Zacharia does not disclose a computer program product comprising a computer readable medium and computer readable signals stored on the computer readable medium that define instructions that, as a result of being

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executed by a computer, instruct the computer to perform a method of determining a personalized ratee reputation of a first entity from the perspective of a second entity associated with the first entity by one or more rating paths, wherein a rating path comprises one or more rating links, each rating link defining a rating of a rated entity provided by a rating entity, wherein each rating path has a length defined as a number of rating links comprised in the path, and each entity comprised on one of the rating paths has a level defined as a number of rating links between the entity and the second entity, the method comprising acts of: (A) performing a breadth-first search beginning at the second entity **to determine**, from the one or more rating paths, **one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity;** (B) for each determined first rating path, identifying a third entity on the first rating path that has a level equal to one less than the first length; (C) for each identified third entity, determining a first rating of the first entity provided by the third entity; (D) combining the first ratings; and (E) producing the personalized ratee reputation **by weighting the combined first ratings by an amount according to the first length**, as recited in claim 20.

Therefore, for at least these reasons, claim 20 is not anticipated by Zacharia under §102(b). Accordingly, Applicant respectfully requests that the rejection of claim 20 under §102(b) as being anticipated by Zacharia be withdrawn. Claims 21-28, which each depend directly or indirectly from claim 20, patentably distinguish over the art of record for at least the same reasons as claim 20. Accordingly, Applicant respectfully requests that the rejection of these claims under §102(b) be withdrawn.

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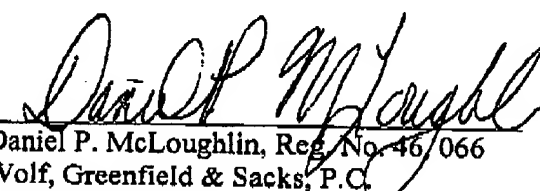## CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted
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